Tamkang University Academic Year 113, 2nd Semester Course Syllabus

Course Title	MICROSOFT AZURE AI IMPLEMENTATION	Instructor	REN-XIANG LIN
Course Class	TGLXB0A ELECTIVES COURSES BY COLLEGE OF BUSINESS AND MANAGEMENT, 0A	Details	◆ General Course ◆ Selective ◆ One Semester ◆ 2 Credits
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

Ⅰ. Acquisition of professional knowledge.

Ⅱ. Learning effective self-planning.

Ⅲ. Theoretical application of practical matters.

Ⅳ. Interpersonal communication and teamwork.

Ⅴ. Analysis of problems and recommendations.

Ⅵ. Awareness of Ethics as a global citizen.

Subject Departmental core competences

A. Students can demonstrate that they have program basic knowledge of business and management.(ratio:20.00)

B. Students can demonstrate that they have capability in professional knowledge expression. (ratio:20.00)

C. Students can demonstrate that they have capability in using information technology. (ratio:30.00)

D. Students can demonstrate that they are critical thinkers.(ratio:30.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:30.00)

2. Information literacy. (ratio:30.00)

3. A vision for the future. (ratio:5.00)

4. Moral integrity. (ratio:5.00)

5. Independent thinking. (ratio:10.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	This course will introduce the LangChain framework which helps facilitate the integration of large language models (LLMs) into applications. Students will learn how to apply Azure OpenAI ChatGPT, Google Gemini and open-source models to develop different domain-specific AI applications through LangChain framework and retrieval augmented generation (RAG) technique.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Students could apply LLMs to develop domain-specific AI applications through LangChain framework and RAG technique.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture, Publication, Practicum	Practicum, Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	114/02/17 ~ 114/02/23	Course introduction	
2	114/02/24 ~ 114/03/02	Development environment	
3	114/03/03 ~ 114/03/09	LangChain introduction	
4	114/03/10 ~ 114/03/16	Prompt template design	

5	114/03/17 ~ 114/03/23	Chain concept	
6	114/03/24 ~ 114/03/30	LangChain expression language	
7	114/03/31 ~ 114/04/06	Holiday	
8	114/04/07 ~ 114/04/13	LangChain memory mechanism	
9	114/04/14 ~ 114/04/20	Azure OpenAI ChatGPT application	
10	114/04/21 ~ 114/04/27	Google Gemini application	
11	114/04/28 ~ 114/05/04	Hugging Face introduction	
12	114/05/05 ~ 114/05/11	Group midterm proposal report	
13	114/05/12 ~ 114/05/18	RAG introduction	
14	114/05/19 ~ 114/05/25	RAG application	
15	114/05/26 ~ 114/06/01	Vector database design	
16	114/06/02 ~ 114/06/08	Chatbot application	
17	114/06/09 ~ 114/06/15	Group final project report	
18	114/06/16 ~ 114/06/22	Flexible Teaching Week: Generally, no in-person classes; teachers may arrange teaching activities or final assessments, among other options.	

Key capabilities	
Interdisciplinary	
Distinctive teaching	
Course Content	Computer programming or Computer language (students have hands-on experience in related projects)

Requirement	
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: LangChain 奇幻旅程：OpenAI x Gemini x 多模態應用開發指南, ISBN: 9786263339729
References	
Grading Policy	◆ Attendance： 20.0 % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： 20.0 % ◆ Final Exam： 30.0 % ◆ Other〈 〉： %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**